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Title: PUBLIC HEALTH NURSES' PERINATAL MENTAL HEALTH TRAINING NEEDS: A CROSS SECTIONAL SURVEY

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Abstract

Aim: To examine public health nurses' education, training and professional support needs in perinatal mental health.

Background: Public health nurses have a key role in supporting maternal mental health including screening, support, referral and decreasing stigmatisation.

Design: A cross-sectional survey.

Methods: Data were collected from a convenience sample of Irish public health nurses (N=105) from December 2016 - February 2018. The anonymous postal survey consisted of the Perinatal Mental Health Questionnaire, Mental Illness: Clinician's Attitudes scale and Perinatal Mental Health Learning Needs questionnaire.

Results: Public health nurses reported good levels of knowledge (77.2%) and confidence (83.8%) in recognising women experiencing stress, anxiety and depression. They indicated less confidence in caring (50.5%) for women. The average score for the Mental Illness: Clinician's Attitudes scale was 35.9 (SD=5.9), suggesting positive attitudes towards women with significant mental illness.

Conclusion: Public health nurses require educational opportunities to explore expressions of psychological distress across cultures and their own personal attitudes to mental health, systems of clinical supervision and support pathways.

What problem did the study address?

- Limited research has explored public health nurses' preparation for a role in perinatal mental health

What were the main findings?

- Public health nurses reported varied confidence in caring for women experiencing perinatal psychological distress but hold positive attitudes to women with severe mental illness.

Where and on whom will the research have an impact

- Public health nurses require access to perinatal mental health specific education incorporating an attitude component and referral options to enhance confidence in care provision.

Key words: public health nurses, nursing, perinatal mental health problems, attitudes, confidence, integrated care pathways

Introduction

Perinatal mental health encompasses the mental and emotional health of women during pregnancy and in the year after birth (Noonan et al., 2017a). The term perinatal mental health problems (PMHPs) refers to the range of psychological distress that healthcare professionals may encounter during this period which may range from depression and anxiety to serious mental health problems (Noonan et al., 2017a; Howard et al., 2018). PMHPs are among the most common morbidities experienced by women with international rates of 13-25% reported (Kingston et al., 2014). A population survey of the prevalence of antenatal depression in Irish maternity services where the Edinburgh Postnatal Depression Scale (EPDS) was administered found that 15.8% of women scored positive for antenatal depression (Jairaj et al., 2018). Leahy-Warren et al., (2011) reported prevalence rates for postnatal depression (PND) in Ireland as 13.2% at six weeks and 9.8% at twelve weeks.

Perinatal mental health issues have an impact on relationships between mothers, babies, infants/children and families which may affect long-term health, social, emotional, cognitive and behavioural development of children and adolescents particularly among disadvantaged populations (HSE, 2017). Furthermore, an experience of PMHPs may have adverse outcomes for maternal health which includes increased risk of serious mental health conditions and suicide. However, negative consequences are not inevitable as effective and timely interventions may improve maternal and child outcomes (Khalifeh et al., 2015).

Background

International consensus recognises the importance of early intervention which has led to initiatives to conduct routine perinatal mental health assessment and screening (NICE, 2014; Higgins et al., 2017a). Public health nurses (PHNs) have a key role in supporting the perinatal mental wellbeing of women and their families. Competency frameworks for perinatal mental health have been developed to guide the preparation of healthcare professionals for this role (Health Education England, 2017). These frameworks make reference to the need for PHNs to have knowledge of the spectrum of PMHPs, evidence-based treatment interventions and available referral options. Furthermore, PHNs require specific skills in prevention, psychosocial assessment, use of screening tools and responding to psychological distress with early interventions and appropriate referrals. In Ireland, PHNs are registered nurses with additional specialist education and qualifications and offer universal primary care services to pregnant women, new mothers and their babies in the community (Noonan et al., 2017b). There is heterogeneity in the role and scope of PHNs internationally. For example, in the UK health visitors or specialist community PHNs or Maternal Child and Family Health Nurses in Australia would have comparable roles to that of the PHN in Ireland. The PHNs role includes conducting home visits which have been identified as the optimum place for development of a therapeutic relationship with the woman which is seen as central to disclosure of psychological needs (Cowley et al., 2015). Women and their families with children under a year old will generally receive a minimum of three core contacts with a PHN with more frequent visits to vulnerable families including those at risk of mental health issues (Mulcahy, 2004). However, despite frequent and universal contact with healthcare professionals during the perinatal period it is estimated that only 50% of women experiencing mental health issues are identified (Redshaw and Henderson, 2016).

Barriers to help seeking for perinatal mental and emotional distress have been identified and include the woman's reluctance to disclose her feelings due to fears of stigma, losing parental rights, being judged as an unfit mother and negative attitudes held by family, friends and healthcare professionals (Dolman et al., 2013). Barriers to identifying women's psychological needs from the perspective of PHNs include lack of time, referral options and stigma (Noonan et al., 2017b).

A lack of contextualised education and continuous professional development opportunities can create barriers to PHNs possessing appropriate knowledge, skills and attitudes to facilitate high quality, evidence-based effective perinatal mental health care responsive to the needs of women (Legere et al., 2017; Henderson et al., 2018). Furthermore, a lack of appropriate education may contribute to stigmatisation and negative attitudes expressed by healthcare professionals which can negatively affect perinatal mental health care provision (Legere et al., 2017). Internationally, training is identified as a core component of perinatal mental health programmes and has been reported as successful in supporting primary care professionals care for women (Reilly et al., 2014). Limited international research has explored PHNs perinatal mental health education and training needs (Noonan et al., 2017b). In Ireland, Higgins et al., (2017b) concluded that PHNs lack knowledge and skills to provide comprehensive perinatal mental health care. Jomeen et al., (2018b) suggests that a complexity of factors may influence healthcare professionals' behaviours including negative attitudes towards women with mental health concerns and inaccurate illness perceptions. Given the interactional nature of engaging women in screening for depression and anxiety, it is important to understand systemic and attitudinal factors influencing PHNs in their decision making around perinatal mental health (Buist et al., 2015; Jomeen et al., 2018b). The attitudes of PHNs who provide care is an important consideration when exploring initiatives

to address stigma associated with mental health problems as these attitudes may influence professional behaviours and care practices (Linden and Kavanagh, 2012; Noonan et al., 2018). To our knowledge, there is a dearth of research exploring PHNs' attitudes to women who experience serious perinatal mental health conditions. Globally, perinatal mental health related stigma and negative attitudes associated with mental illness have emerged as major barriers to the help seeking behaviour of women (Dolman et al., 2013) and is as much a problem for healthcare professionals as it is for the community they serve (Rahman et al., 2013).

THE STUDY

Aim

To examine public health nurses' education, training and professional support needs in perinatal mental health.

Objectives.

The objectives of the study were: (1) to identify knowledge of and confidence among PHNs to identify and care for women who experience PMHPs; (2) to examine their opinions of professional issues associated with provision of perinatal mental health care; (3) to explore their attitudes towards women who present with severe mental illness; and (4) perceived perinatal mental health learning needs.

Design

This study represents a cross-sectional survey of a convenience sample of PHNs in the Republic of Ireland. The STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) standardised reporting guidelines were used to guide the conduct and reporting of the research (von Elm et al., 2007).

Participants

A convenience sampling technique was employed in this study where PHNs (N=227) working in three community health organisations in the Republic of Ireland were invited to participate. The inclusion criteria were PHN's registered with the Nursing and Midwifery Board of Ireland and who had a caseload comprising of women, babies and their families in the community. Student PHNs and nurses working in the community but not registered as PHNs were excluded from the study. A study pack consisting of a letter of invitation, participant information leaflet, questionnaire and stamped addressed envelope was sent by post to PHNs identified on a list provided by the gatekeeper to the study sites. The envelopes were coded for each community health organisation to facilitate recording of responses from recruitment locations.

Data collection

Data were collected from December 2016 - February 2018 using a self-administered anonymous postal questionnaire which took 10-20 minutes to complete.

Survey instrument

The questionnaire was comprised of psychometrically tested scales to measure PHNs self-rated knowledge, confidence and attitudes in identifying and caring for women with PMHPs.

The questionnaire also focused on practitioner beliefs of causative factors, consequences of PMHPs for women and infants, perceptions of professional issues and education and training needs.

Survey structure

The survey comprised five sub-sections:

- A section on socio-demographics requested information pertaining to gender, age, qualification, years of experience working as a PHN, highest educational level attained, recent post-registration perinatal mental health education, how often PHNs worked with women who experience perinatal psychological distress and whether they knew someone or had a personal experience of a mental health problem.
- The Perinatal Mental Health Questionnaire (PMHQ) consists of three validated subscales; Perinatal Mental Health Awareness (PMHA) scale, Perinatal Illness Perceptions Scale (PIPS) and Professional Issues in Maternal Mental Health Scale (PIMMHS).

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- The Perinatal Mental Health Awareness (PMHA) scale consists of 9 items representing key domains relating to (i) knowledge of (ii) confidence in identification and (iii) confidence in management of perinatal mental health issues. Previous research has demonstrated a Cronbach's alpha of 0.79, with subscales PMHA-SAD (Stress, Anxiety, Depression) 0.68, PMHA-MED (Medical/obstetric complications) 0.77, PMHA-LD (Learning Disability) 0.78 (Martin et al., 2017).
 - The Perinatal Illness Perceptions Scale (PIPS) comprised of three sub-scales; Causes, Consequences (Mother); Consequences (Baby). The Causes sub-scale (17-item) explores personal ideas relating to the aetiology of PMHPs. The Consequences sub-scale (7-items) relates to the anticipated effects and outcome on the life of the person experiencing PMHPs and on her baby. Cronbach's alpha of the PIPS-CAUSES, PIPS-MOTHER and PIPS-BABY sub-scales has been reported as 0.90 (0.89-0.92), 0.75 (0.70-0.80) and 0.63 (0.54-0.71) respectively (95% confidence interval) (Jomeen et al., 2018b).
 - The seven-item Professional Issues in Maternal Mental Health Scale (PIMMHS) explores perceptions of professional issues relating to the provision of perinatal mental health care using two subscales PIMMHS Emotional sub-scale and PIMMHS-Training sub-scale. A Cronbach's alpha of 0.81 (0.89-0.92) has been reported for the PIMMHS-Emotion sub-scale and 0.57 (0.48-0.66) for the PIMMHS-Training sub-scale (Jomeen et al., 2018a)

- Mental Illness: Clinicians' Attitudes (MICA-version 4) scale comprises 16 items that assess attitudes towards people with severe mental illness. Scores range from 16 to 96 where a higher score corresponds to more negative stigmatising attitudes towards individuals with mental illness and psychiatry. The reliability of the scale has been established (Cronbach's alpha 0.72) and item-total correlations (≥ 0.2) (Gabbidon et al., 2013).
- PHNs' professional development/learning needs were determined from six items developed by Hauck et al., (2015). Participants were also asked to respond to five questions which captured PHNs access to perinatal mental health guidelines, current screening practices and available referral options. In addition, one open question asked PHNs if they had anything they would like to add.

Ethical considerations

Ethical approval was granted from three research ethics committees governing the corresponding community health organisations. The directors of public health nursing acted as gate-keepers and granted access to study sites. Recruitment took place from December 2016 - February 2018 which was dependent on the availability of gate keepers to facilitate distribution. Informed consent was implied by return of the completed questionnaires in the stamped addressed envelope provided. No identifiable information was requested in the questionnaire.

Data analysis

Statistical Package for Social Science (SPSS) Version 24 was used to conduct data analysis.

To verify the accuracy of data entry and coding, an independent person (OD) double-checked a 10% random sample of data entries across the online data and the original paper-based questionnaires. Descriptive statistics were computed (mean and SD, proportions and percentages) for demographic data, knowledge, confidence, attitude statements and professional development learning needs. Fisher's exact test were employed where any expected cell count was less than five to identify associations between categorical variables on the PMHA scale and associations were considered statistically significant at the 5% level ($P < 0.05$). Participants responses ($N=30$) to the open question "Is there anything you would like to add?" were analysed by two researchers (MN, OD) using thematic analysis (Braun and Clarke, 2013). Each answer to the open question was read and re-read followed by comparisons across all responses to the open questions. Codes were generated from data to give a reduced meaning or description to each segment of data. This phase concluded with collation of codes with relevant data extracts which were subsequently synthesised to form four over-arching themes (Braun and Clarke, 2013).

Validity and reliability

A draft of the questionnaire was piloted with ten PHNs to determine the feasibility of recruitment to the main study and suitability of the questionnaire. A Content Validity Index (CVI) and clarity questionnaire were completed by a panel of experts consisting of a mix of eight health care professionals and academics. Feedback from the pilot and expert panel suggested that the questionnaire was suitable for the Irish context and minimal alterations to the demographic section, question sequence and open-ended questions included in the final

questionnaire were required. Internal consistencies have been reported for the scales included in the questionnaire (Gabbidon et al., 2013, Martin et al., 2017, Jomeen et al., 2018ab) and most scales achieved acceptable values for Cronbach's alpha above the satisfactory range of between 0.60-0.70 (Cronin et al., 2015).

Results

Demographic characteristics

In Ireland there is currently no national database for accessing PHNs for research purposes and therefore no way of determining accurately the number of participants that received the questionnaire. Response rates have been calculated based on estimated regional figures of PHNs. A total of 105 (46.2%) of 227 eligible PHNs employed across the study sites completed the survey. Table 1 displays the demographic characteristics of included participants. Most respondents were registered midwives (74.3%) and had greater than 10 years experience working as a public health nurse. Over 70% of PHNs had studied at postgraduate diploma and MSc level. A total of 66.3% reported a personal experience of mental health issues through friend, family or self. Moreover, 28.6% of PHNs encountered women experiencing mental health issues frequently however most PHNs (61.9%) reported caring for women with mental health problems sometimes. Twenty-six (24.8%) respondents reported that they had completed perinatal mental health continuous professional development courses and of these, one PHN reported having completed a course in the previous 6-12 months.

The Perinatal Mental Health Questionnaire

Table 2 presents PHNs self-reported knowledge and confidence in advising and caring for women with PMHPs. Most PHNs perceived themselves to be very knowledgeable/knowledgeable (77.2%, N=81) and very confident/confident (83.8%, N=88) in recognising stress, anxiety and depression. However, 50.5% (N=53) of PHNs indicated that they were not very confident/confident in managing care for women experiencing stress, anxiety and depression. A significant association was found between those reporting a high level of knowledge and their level of confidence in recognising stress, anxiety and depression (Fisher's Exact test, $p < 0.01$). Furthermore, levels of knowledge were also significantly associated with (Fisher's Exact test, $p < 0.01$) levels of confidence to care for women with PMHPs. Age, level of education, perinatal mental health specific education, frequency of contact with women who experience PMHPs and having a personal experience of mental health through self, family and friends were unrelated to having higher or lower levels of confidence in our sample.

PHNs indicated awareness of factors associated with PMHPs with 91.4% (N=78) identifying a psychiatric history and 55.3% (N=58) a family history as a cause of PMHPs. Most PHNs (95.2%, N=99) perceived that PMHPs have major consequences on the lives of women who have them and their babies.

On the Professional Issues in Maternal Mental Health Scale (Table 3), only 10.6% (N=11) agreed that training equipped PHNs to care for the diversity in cultural backgrounds of women experiencing PMHPs. A lack of time was identified as a barrier by 16.4% (N=17) of respondents to engage in a discussion with women about perinatal emotional issues.

Attitudes – Mental Illness: Clinicians' Attitudes (MICA-version 4)

The variables appeared reasonably normally distributed for the MICA scale. The mean score for the MICA-4 was 35.9 (SD=5.9) indicating positive attitudes towards women with severe mental illness. Table 4 displays individual responses to the MICA- 4 scale.

Professional development

Perinatal mental health education and training needs among PHNs is presented in Table 5.

One quarter of respondents (26.5%, N=26) reported that they felt well equipped to support women with PMHPs. In addition, 29.6% (N=29) of respondents felt they had sufficient information. Study days were identified as the preferred format of continuous professional development activities by almost half of respondents (45.7%, N=48).

Open questions

Most PHNs (53.3%, N=49) reported that they had access to perinatal mental health guidelines, 91.9% (N=91) of PHNs reported enquiring about psychiatric history, 92.9% (N=91) assessed symptoms of PMHPs at the initial visit and 89.5%, (N=85) at follow up visits. Most PHNs reported that they used a formal screening tool when assessing current perinatal mental health issues with 38.8% (N=38) using the Whooley questions, 17.3 % (N=17) the Edinburgh Postnatal Depression Scale (EPDS) and 36.7% (N=36) referencing both the Whooley and EPDs. Referral to the General Practitioner 73.3% (N=77) was the most common referral pathway reported by PHNs followed by referral to community mental health nurses (21%, N=22) and counselling (20%, N=21). Thematic analysis of open questions from 30 respondents identified four themes; Continuous professional development, engagement in perinatal mental health conversations, referral and personal experience (Table 6).

Discussion

To our knowledge this is the first study that has examined PHNs' attitudes to women with PMHPs and findings suggest that while PHNs reported positive attitudes, further education is required which includes an attitude component to prepare PHNs to undertake an effective role in perinatal mental health care. Most PHNs reported high levels of knowledge and confidence in identifying women with stress, anxiety and depression in the perinatal period. However, 63.8% of PHNs reported the need for additional skills development for assessment of perinatal mental health. Symptoms of perinatal depression and anxiety have the potential to overlap with those of perinatal transitions making accurate detection a challenge (Legere et al., 2017). Further training can support the contextualisation and use of existing knowledge and experience to underpin effective clinical decision making (Jones et al., 2015). Most PHNs (92.8%) reported screening for perinatal mental health issues using screening tools which is consistent with recommendations (NICE, 2014, Higgins et al., 2017a.). Moreover, rigorous and systematic implementation of assessment questions and screening tools may reduce detection disparities that exist for women from ethnic minority groups (Prady et al., 2016).

Over half of PHNs indicated that they were not confident to manage stress, anxiety and depression. A lack of confidence can impede PHNs provision of emotional care and support (Reilly et al., 2014) and may be related to availability and accessibility of PMH specific education and referral services (Jomeen *et al.* 2013). Education and training have been shown to be effective in developing healthcare professionals' confidence and competence to respond to women's perinatal mental health care needs (Jones et al., 2015; Morrell et al., 2015).

Higgins et al., (2017b) found that PHNs who had received perinatal mental health specific education had statistically significant higher confidence and skills levels in comparison to

those without perinatal mental health education. In relation to referral, PHNs primarily directed women to their GP and only 22% of PHNs referred to community mental health nurses. A total of 82.7% of respondents knew who to contact if a woman is experiencing psychological distress however, 51.9% of respondents found it difficult to obtain help for women with PMHPs. Findings from the thematic analysis identified that PHNs find it frustrating that they cannot refer directly to community mental health teams. Similarly, PHNs in Northern Ireland raised concerns in relation to accessing timely mental health care for women as referrals can only be made through the GP and expressed a preference for direct referral processes into perinatal mental health specialist and community mental health services (Regulation and Quality Improvement Authority, 2017). Women who experience PMHPs have expressed a preference for timely referral systems that have minimal steps involved (Buist et al., 2015). Furthermore, 59% of PHNs desired further education on understanding service options and this would increase PHNs awareness and understanding of the existence and accessibility of referral options available in community settings and lead to fewer inappropriate referrals (Jones et al., 2015).

A significant proportion of PHNs did not consider that a family history (44.7%) played a contributory role in PMHPs in spite of research demonstrating that a prior family history was a risk factor for the development of PMHPs. Healthcare professional's knowledge of risk and protective factors associated with PMHPs influences the sensitive inquiry process during consultations with women and their families (Galloway and Hogg, 2015). Moreover, a lack of knowledge of risk factors has been identified as a barrier to screening (Bayrampour et al., 2018). Jomeen et al., (2018b) contend that HCPs with a greater awareness of causes of PMHPs may be more likely to target prevention and know appropriate referral options and contacts when encountering perinatal mental health concerns. However, PHNs reported

appropriate knowledge of the possible adverse long-term outcomes on infant attachment and family functioning. Knowledge of the consequences of PMHPs is necessary for perinatal mental health to be given a higher priority in PHN visits.

Findings from the Professional Issues in Maternal Mental Health scale suggests that PHNs require further preparation to enable them to respond effectively to meet women's psychological needs across cultures. This is similar to other findings which highlight that healthcare professionals are ill prepared to practice in a culturally-competent way (Almond and Lathlean, 2011). Training is required to recognise and respond to different cultural expressions of perinatal psychological distress to ensure equity of perinatal mental health services (Watt et al., 2016). A key factor affecting PHNs engagement in discussing emotional issues is time which is recognised as a dimension of trusting relationships with PHNs essential for disclosure of psychological distress. Most PHNs (74%) reported having sufficient time to respond to women presenting with perinatal mental health issues.

The MICA 4 scale is applicable to a variety of healthcare professionals with a higher score suggesting more negative stigma-associated attitudes to mental health (Gabbidon et al., 2013). This study reports a similar MICA-4 score (mean score 35.9, SD=5.9) to Noonan et al., (2018) (mean score 36.31, SD=7.6) and Gabbidon et al., (2013) (mean score 34.55, SD=7.11). The original authors of the MICA-4 scale do not provide guidance on a desirable range. Gras et al., (2015) proposed that a mean score of 48 would suggest a moderately positive attitude towards the profession of psychiatry and persons with severe mental health problems, a mean score of 32 a positive attitude and the maximum score of 16 a very positive attitude.

Most PHNs (91.4%) identified that people with a severe mental illness were not dangerous however, 43.8% reported that the public needs to be protected from people with a severe mental illness. This finding suggests that while PHNs may themselves not feel fear when engaging with women with severe mental health issues however they may be fearful from the perspective of the general public. A variety of reasons may account for this view including PHNs previous encounters with patients with more severe symptoms in acute in-patient and community settings (Lyons and Janca 2015). In addition, inaccurate portrayals of persons with mental health problems in the news, media and film industry may contribute to stigmatised views held by healthcare professionals. Fear of persons with mental illness is linked to avoidance which in turn may have an impact on care that women receive (Van Nieuwenhuizen et al., 2013; Eksteen et al., 2017). Furthermore, HCPs who are inadequately prepared for their role in perinatal mental health may experience fear and a desire for avoidance and distance and this can have a negative impact on interactions between the woman and healthcare professional and have an adverse impact on quality of perinatal mental health care leading to less effective treatment uptake and poorer outcomes (Henderson et al., 2014).

PHNs agreed with statements that if they had a mental illness, they would never admit this to colleagues (49.5%) or to friends (34.3%) for fear of being treated differently suggesting a stigmatizing attitude in relation to disclosure. In Ireland, a recent survey commissioned by the National Mental Health Stigma Reduction Partnership See Change, reported that 25% of the general public would conceal a mental health difficulty from family, friends and colleagues (See change, 2017). Vendsborg et al., (2013) suggest that in the general public, about 25% would not disclose this information to their friends and family and about 50% would not disclose this information to colleagues. Findings from thematic analysis suggest that mental

health remains a 'taboo' subject. Participants who had a personal experience of PND highlighted the need for further education to address the stigma associated with PMHPs.

Professional training has the potential to offer a mechanism to support PHNs to explore their own personal attitudes to mental health to address underlying assumptions, negative and stigmatising beliefs (Markstrom et al., 2009; Legere et al., 2017). Providing opportunities to explore prevalence of mental health issues amongst healthcare professionals themselves and the impact of their non-disclosure may improve attitudes towards mental health problems (Gras et al., 2015). However, evidence for the effectiveness of anti-stigma training on attitudinal changes is varied with some researchers identifying no significant change in attitudes (Kassam et al., 2011) and others identifying significant changes which were maintained after a six month follow up period (Li et al., 2015). To maintain outcomes of anti-stigma training in the longer term, educational and professional strategies to address stigma need to be embedded and integrated in undergraduate and postgraduate healthcare professional curriculums, in perinatal mental health continuous professional development programmes and in practice (Lyons and Janca, 2015).

Our findings are in-keeping with a previous study by Asford et al., (2017) where PHNs reported feeling not equipped to adequately support women with perinatal mental health issues. PHNs are required to develop a diverse range of skills to meet a variety of client groups needs making it difficult to focus on specific skills. The highest scoring areas for additional education were anxiety (69.5%) and depression (65.7%) and this finding may reflect presentations that PHNs are encountering in practice. Furthermore, it is acknowledged that much of the focus of perinatal mental health has been on depression and this needs to change to incorporate the spectrum of PMHPs (Noonan et al., 2017a, b).

Seventy percent of PHNs reported that they had insufficient access to information which may be explained by the finding that just over half of PHNs had access to policy/guidelines and there are currently no national guidelines relating to perinatal mental health available. Legere et al., (2017) contend that guidelines can offer a resource to enhance healthcare professional's confidence, attitudes and knowledge and support a consistent approach to education and perinatal mental health care provision. Our findings lend support for the development of additional continuous professional development opportunities to assist PHNs in their role. Limited access to continuous professional development opportunities can have a negative impact on levels of knowledge and awareness of perinatal mental health while on the other hand training for healthcare professionals has been noted as an effective strategy in the prevention of PMHPs (Legere et al., 2017). Effective training has potential to promote consistency in the implementation of evidence-based practices including screening, which in turn creates greater equity in access to perinatal mental health services for women and their families (Morrell et al., 2015, Henderson et al., 2018).

PHNs reported a preference for study days with only 1.9% identifying an online module as their first preference for perinatal mental health training delivery. This may indicate a preference for contact and may be reflective of the fact that generally PHNs work as lone healthcare professionals creating a sense of isolation and thus favour an education mechanism involving contact. However, e-learning offers advantages in terms of cost, ease of dissemination, flexibility and resources (Morrell et al., 2015) and web-based courses have been found to be effective in supporting nurses to use more evidence-based approaches for postpartum emotional distress (Ingatottir and Thome, 2006). There is evidence that interactive teaching approaches provided through more than one session can positively improve the confidence levels of healthcare professionals to provide perinatal mental health

care to women and their families (Higgins et al., 2016; Legere et al., 2017). Short sessions on perinatal mental health have also been linked to improved knowledge and confidence in care provision (Jones et al., 2015). Legere et al., (2017) concluded that diverse professional perinatal mental health education strategies enhanced healthcare professional's confidence, knowledge, screening efficiency and resulted in overall favourable outcomes for women including reduced EPDS scores and enhanced communication regardless of education modality (Legere et al., 2017).

Strengths and limitations

The survey used internationally psychometrically validated scales to examine PHNs knowledge, confidence and attitudes in relation to perinatal mental health. Limitations of this study include a small sample and low response (46.2%) rate. Therefore, the study results should be interpreted with caution as even though the questionnaire was anonymous, the response rate may have been affected by the sensitivity of the topic. Social desirability responses may occur with sensitive questioning in the area of attitudes to mental health. However, a socially desirable response was minimised through the anonymity the survey offered. Information was not collected about non-responders and it is possible that PHNs with an interest in perinatal mental health responded to the survey and were attitudinally and/or behaviourally different to those who choose not to respond. The quantitative data were not supplemented with any qualitative data beyond responses to open questions which may have provided a more varied picture. The MICA-4 scale was not specific to the context of perinatal mental health. In addition, self-reporting perceived knowledge and confidence may be limited by a cognitive bias where participants may have reported themselves as being more knowledgeable than they are actually in reality.

Conclusion

The findings of this study suggest that PHNs require further preparation for a role in perinatal mental health through PHN training programmes and ongoing continuous professional development opportunities that address attitudes to mental health and expressions of psychological distress across cultures. Secondly, systems of clinical supervision and support pathways which include opportunities for discussion and reflection on personal attitudes and professional issues that may arise in caring for women experiencing psychological distress may serve to enhance the role of PHNs in perinatal mental health. PHNs require access to a variety of community based culturally sensitive and perinatal mental health specific referral options to enhance their confidence in care provision. Further research comparing diverse educational professional development approaches using validated outcome assessment measures including perinatal mental health specific attitude scales are required to identify the most effective strategies for education that consistently meets the needs of PHNs.

Conflict of Interest Statement

No conflict of interest has been declared by the authors.

Author Contributions:

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Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data;	MN, RG, JJ, OD
Involved in drafting the manuscript or revising it critically for important intellectual content;	MN, RG, JJ, OD
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Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.	MN, RG, JJ, OD

References

Almond, P. & Lathlean, J. (2011). Inequity in provision of and access to health visiting postnatal depression services. *Journal of Advanced Nursing*, 67, 2350-2362. doi: 10.1111/j.1365-2648.2011.05669. x

Ashford, M.T., Ayers, S. & Olander, E.K. (2017). Supporting women with postpartum anxiety: exploring views and experiences of specialist community public health nurses in the UK. *Health and Social Care in the Community*, 25(3), 1257-1264.
<https://doi.org/10.1111/hsc.12428>

Bayrampour, H., Hapsari, A.P. and Pavlovic, J. (2018). Barriers to addressing perinatal mental health issues in midwifery settings. *Midwifery*, 59, 47-58.

Buist, A., O'Mahen, H. & Rooney, R. (2015). Acceptability, Attitudes and Overcoming Stigma. In *Identifying Perinatal Depression and Anxiety Evidence-Based Practice in Screening, Psychosocial Assessment and Management*. (Milgrom J & Gemmill AW Eds), Wiley Blackwell, London, 51-62.

Braun, V. and Clarke, V. (2013). *Successful Qualitative Research a practical guide for beginners*, London: Sage.

Cowley, S., Whittaker, K., Malone, M., Donetto, S., Grigulis, A. & Maben, J. (2015). Why health visiting? Examining the potential public health benefits from health visiting practice within a universal service: A narrative review of the literature. *International Journal of Nursing Studies*, 52, 465-480. doi.org/10.1016/j.ijnurstu.2014.07.013

Cronin, P., Coughlan, M. & Smith, V. (2015). *Understanding Nursing and Healthcare Research*, Sage, London.

Dolman, C., Jones, I. & Howard, L.M. (2013). Pre-conception to parenting: a systematic review and meta-synthesis of the qualitative literature on motherhood for women with severe mental illness. *Arch of Womens Ment health*, 16, 173-196. doi.10.1007/s00737-013-0336-0

Eksteen, H-C., Becker, P.J. & Lippi, G. (2017). Stigmatisation towards the mentally ill: Perceptions of psychiatrists, pre-clinical and post-clinical rotation medical students. *International Journal of Social Psychiatry*, 63(8), 782-791.

Gabbidon, J., Clement, S., van Nieuwenhuizen, A., Kassam, A., Brohan, E., Norman, I. & Thornicroft, G. (2013). Mental Illness: Clinicians' Attitudes (MICA) Scale – Psychometric properties of a version for healthcare students and professionals. *Psychiatry Research*, 206, 81-87.

Galloway, S. & Hogg, S. (2015). *Getting It Right for Mothers and Babies. Closing the gaps in community perinatal mental health services*, NSPCC Scotland, Scotland.

Gras, L.M., Swart, M., Slooff, C.J., van Weeghel, J., Kneegtering, H. & Castelein, S. (2015).

Differential stigmatising attitudes of healthcare professionals towards psychiatry and patients with mental health problems: something to worry about? A pilot study. *Soc Psychiatry Psychiatr Epidemiol*, 50, 299-306. DOI 10.1007/s00127-014-0931-z

Hauck, Y.L., Kelly, G., Dragovic, M., Whittaker, P. & Badcock, J. (2015). Australian Midwives Knowledge, Attitudes and Perceived Learning Needs around Perinatal Mental Health. *Midwifery*, 31, 247-255.

Health Education England (2017, December 2018). Perinatal Mental Health Competency framework. Retrieved from <https://perinatalcompetency.e-lfh.org.uk/>

Health Service Executive (HSE) (2017). *Specialists Perinatal Mental Health Services Model of Care for Ireland*. National Mental Health Division, HSE, Dublin, Ireland.
[http://www.hse.ie/eng/services/list/4/Mental Health Services/](http://www.hse.ie/eng/services/list/4/Mental%20Health%20Services/)

Henderson, C., Noblett, J., Parke, H., Clement, S., Caffrey, A., Gale-Grant, O., Schulze, B., Druss, B. and Thornicroft, G. (2014). Mental health-related stigma in health care and mental health-care settings. *Lancet Psychiatry*, 1, 467-482.

Henderson, J., Jomeen, J. & Redshaw, M. (2018). Care and self-reported outcomes of care experienced by women with mental health problems in pregnancy: findings from a national survey. *Midwifery*, 56, 171-178.

Higgins, A., Carroll, M., Gill, A., Downes, C. & Monahan, M. (2017a). Perinatal Mental Health Care: Best Practice Principles for Midwives, Public Health Nurses and Practice Nurses. Health Service Executive, Dublin, Ireland.

Higgins, A., Downes, C., Carroll, M., Gill, A. & Monahan, M. (2017b). There is more to perinatal mental health care than depression: public health nurses' reported engagement and competence in perinatal mental health care. *Journal of Clinical Nursing*, 27(3-4), e476-e487.

Higgins, A., Carroll, M. & Sharek, D. (2016). Impact of perinatal mental health education on student midwives' knowledge, skills and attitudes: A pre/post evaluation of a module of study. *Nurse Education Today*, 36; 364-369. doi: 10.1016/j.nedt.2015.09.007

Howard, L. M., Ryan, E. G., Trevillion, K. Anderson, F., Bick, D., Bye, A., Byford, S., O'Connor, S., Sands, P., Demilew, J., Milgrom, J. & Pickles, A. (2018). Accuracy of the Whooley questions and the Edinburgh Postnatal Depression Scale in identifying depression and other mental disorders in early pregnancy. *The British Journal of Psychiatry*, 212, 50-56.

Ingadottir, E. & Thome, M. (2006) Evaluation of a web-based course for community nurses on postpartum emotional distress. *Scand J Caring Sci*, 20(1), 86-92.

Irish National Framework of Qualifications (NFQ)(2019, January 20). Retrived from
<https://prdnfq.azurewebsites.net/>

Jairaj, C., Fitzsimons, C.M., McAuliffe, F.M., et al. (2018). A population survey of prevalence rates of antenatal depression in the Irish obstetric services using the edinburgh postnatal depression scale (epds). *Archives of Women's Health*, <https://doi-org.proxy.lib.ul.ie/10.1007/s00737-018-0893-3>

Jomeen, J., Glover, L., Jones, C., Garg, D. & Marshall, C. (2013). Assessing women's perinatal psychological health: exploring the experiences of health visitors. *Journal of Reproductive and infant Psychology*, 31(5), 479-489.

Jomeen, J., Jarrett, P. & Martin, C.R. (2018a). Professional issues in maternal mental health scale (PIMMHS): The development and initial validation of a brief and valid measure. *Eur J Midwifery* 2018; 2 (February):2. DOI 10.18332/ejm/83276

Jomeen, J., Martin, C.R. and Jarrett, P. (2018b) 'Psychometric evaluation of the Perinatal Illness Perceptions Scale (PIPS)', *The Journal of Mental Health Training, Education and Practice*, <https://doi.org/10.1108/JMHTEP-09-2018-0054>.

Jones, C., Jomeen, J., Glover, L., Gardiner, E., Garg, D. & Marshall, C. (2015). Exploring changes in health visitors knowledge, confidence and decision-making for women with

perinatal mental health difficulties following a brief training package. *European Journal for Person Centred Healthcare*, 3(3), 384-391.

Kassam, A., Glozier, N., Leese, M., Henderson, C. Loughran, J. and Thornicroft, G. (2011). A controlled trial of mental illness related stigma training for medical students. *BMC Medical Education*, 11, 51. <https://doi.org/10.1186/1472-6920-11-51>

Khalifeh, H., Brauer, R., Toulmin, H. & Howard, L.M. (2015). Perinatal mental health: What every neonatologist should know. *Early Human Development*, 91(2015), 649-653.
<http://dx.doi.org/10.1016/j.earlhumdev.2015.08.010>

Kingston, D., McDonald, S., Tough, S., Austin, M.P., Hegadoren, K., Lasiuk, G. (2014). Public views of acceptability of perinatal mental health screening and treatment preference: a population based survey. *BMC Pregnancy Childbirth*, 14(67). doi:10.1186/1471-2393-14-67

Leahy-Warren, P., McCarthy, G. & Corcoran, P. (2011). Postnatal Depression in First-Time Mothers: Prevalence and Relationships Between Functional and Structural Social Support at 6 and 12 Weeks Postpartum. *Archives of Psychiatric Nursing*, 25(3), 174-184.

Legere, L.E., Wallace, K., Bowen, A., McQueen, K., Montgomery, P. & Evans, M. (2017). Approaches to health-care provider education and professional development in perinatal depression: a systematic review. *BMC Pregnancy and Childbirth*, 17, 239. DOI 10.1186/s12884-017-1431-4

Li, J., Li, J., Thornicroft, G., Yang, H., Chen, W. and Huang, Y. (2015). Training community mental health staffing Guangzhou, China: evaluation of the effect of a new training model.

BMC Psychiatry, 15, 263.

Lyons, Z., & Janca, A. (2015). Impact of a psychiatry clerkship on stigma, attitudes towards psychiatry and psychiatry as a career choice. *BMC medical education*, 15, 34.

doi:10.1186/s12909-015-0307-4

Marikstrom, U., Gyllesten, A.L., Bejerholm, U. & Bjorkman, T., et al. (2009). Attitudes towards mental illness among health care students at Swedish universities – A follow-up study after completed clinical placement. *Nurse Education Today*, 29, 660-665.

Martin, C.R., Jomeen, J. & Jarrett, P. (2017). The development and initial validation of the Perinatal Mental Health Awareness (PMHA) scale in student midwives. *Journal of Midwifery and Reproductive Health*, 5(4), 1021-1031. DOI: 10.22038/JMRH.2017.9251.

Morrell, J.C., Cubison, J., Ricketts, T., Williams, A.S. & Hall, P. (2015). Training Health-Care Professionals for the Assessment and Management of Perinatal depression and Anxiety, In. *Identifying Perinatal Depression and Anxiety Evidence-Based Practice in Screening, Psychosocial Assessment and Management*, (Milgrom J. & Gemmill AW, eds), Wiley Blackwell, London, 210-227.

Mulcahy, H. (2004). 'Vulnerable family' as understood by public health nurses. *Community Practitioner*, 77(7), 257-260.

National Institute for Health and Clinical Excellence (NICE). (2014). *Antenatal and postnatal mental health: Clinical management and service guidance*. NICE clinical guideline 45. 2014 Dec; guidance.nice.org.uk/cg192.

Noonan, M., Doody, O., Jomeen, J. & Galvin, R. (2017a). Midwives' perceptions and experiences of caring for women who experience perinatal mental health problems: An integrative review. *Midwifery*, 45, 56-71. DOI: <https://doi.org/10.1016/j.midw.2016.12.010>

Noonan, M., Galvin, R., Doody, O. & Jomeen, J. (2017b). A qualitative meta-synthesis: public health nurses role in the identification and management of perinatal mental health problems. *Journal of Advanced Nursing*, 73(3), 545-557. DOI: 10.1111/jan.13155

Noonan, M., Jomeen J., Galvin, R. & Doody, O. (2018). Survey of midwives' perinatal mental health knowledge, confidence, attitudes and learning needs. *Women and Birth*, 31(6), e358-e366 DOI: <https://doi.org/10.1016/j.wombi.2018.02.002>

Prady, S.L., Pickett, K.E., Petherick, E.S., Gilbody, S., Croudace, T., Mason, D., Sheldon, T.A. & Wright, J. (2016). Evaluation of ethnic disparities in detection of depression and anxiety in primary care during the maternal period: combined analysis of routine and cohort data. *Br J Psychiatry*, 208 (5), 453-461. <https://doi.org/10.1192/bjp.bp.114.158832>

Rahman, A., Surkan, P.J., Cayetano, C.E., Rwagatare, P. & Dickson, K.E. (2013). Grand Challenges: Integrating Maternal Mental Health into Maternal and Child Health Programmes. *PLOS Medicine*, 10 (5), e1001442.

Redshaw, M. & Henderson, J. (2016). Who is actually asked about their mental health in pregnancy and the postnatal period? Findings from a national survey. *BMC Psychiatry*, 16, 322. DOI 10.1186/s12888-016-1029-9.

Regulation and Quality Improvement Authority (RQIA) (2017). *Review of Perinatal Mental Health Services in Northern Ireland*, Retrieved from www.rqia.org.uk

Reilly, N., Harris, S., Loxton, D., Chojenta, C., Forder, P. & Austin, M._P. (2014). The impact of routine assessment of past or current mental health on help-seeking in the perinatal period. *Women and Birth*, 27 (2014), e30-e27.

See Change (2017). Green Ribbon Impact Report 2017. See Change The National Mental Health Stigma Reduction Partnership Ireland. Retrieved from <https://www.hse.ie/eng/services/list/4/mental-health-services/connecting-for-life/publications/green-ribbon-impact-report-2017.pdf>

Van Nieuwenhuizen, A., Henderson, C., Kassam, A., Graham, T., Murray, J., Howard, L.M. & Thornicroft, G. (2013). Emergency department staff views and experiences on diagnostic overshadowing related to people with mental illness. *Epidemiology and Psychiatric Sciences*, 22, 255-262. Doi: 10.1017/S2045796012000571

Vendsborg, P., Bratbo, J., Dannevang, A., Hagedorn-Moller, J., Kistrup, K., Lindhardt, A. & Nordentoft, M. (2013). Staff attitudes towards patients with schizophrenia. *Danish Medical Journal*, 60 (10), A4710.

von Elm, E., Altman, D.G., Egger, M., Pocock, S.J., Gøtzsche, P.C. & Vandembroucke, J.P. (2007). STROBE Initiative. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Lancet*, 370(9596):1453-7. PMID: 18064739

Watt, K., Abbott, P. & Reath, J. (2016). Developing cultural competence in general practitioners: an integrative review of the literature. *BMC Family Practice*, 17, 158.

Table 1. Demographic variables (n=105 unless stated)

Age	Years worked as a PHN	Education (n=156)
30-39 (n=20) 19.1%	<1 (n=5) 4.8%	Certificate (n=3) 2.9%
40-49 (n=59) 56.2%	1-2 (n=7) 6.7%	Diploma (n=16) 15.2%
50-55-> (n=26) 24.8%	2-5 (n=10) 9.5%	Degree (n=9) 8.6%
	5-10 (n=19) 18.1%	Postgraduate diploma (n=64) 61%
	>10 (n=64) 61%	Masters (n=13) 12.4%
Personal experience of mental health issues (through friend, family or self) (n=104)	Work pattern	Contact with women with PMHPs
Yes (n=69) 66.3% No (n=35) 33.7%	Full-time (n=81) 77.1%	Very often/frequently (n=30) 28.6%
	Reduced hours (n=24) 22.9%	Sometimes (n=65) 61.9%
		Rarely/never (n=10) 9.5 %
Qualifications held other than RGN/PHN (n=105)		
Registered Midwife (n=78) 74.3%		
Registered Psychiatric Nurse (n=6) 5.7%		
Registered Children's Nurse (n=8) 7.6%		
Registered Nurse Intellectual Disabilities (n=2) 1.9%		
Registered Nurse Prescriber (n=1) 1%		
Certificate – level 6		
Diploma and degree – level 8		
Postgraduate diploma and Masters – level 9		
(National Framework for Qualifications 2014 supplementary file)		

Table 2. Perinatal Mental Health Awareness scale (K = knowledgeable, C = confident) (n=105)

	Very (K/C)	K/C	Not very (K/C)	Not (K/C)
How knowledgeable are you about the following conditions				
Stress, anxiety and depression	n=9, 8.6%	n=72, 68.6%	n= 23, 21.9%	n=1, 1%
Learning disabilities	n=5, 4.8%	n=48, 45.7%	n=45, 42.9%	n=7, 6.7%
Medical, obstetric complications	n=19, 18.1%	n=72, 68.6%	n=14, 13.3%	n=0, 0%
How confident are you in identifying the following conditions				
Stress, anxiety and depression	n=15, 14.3%	n=73, 69.5%	n=17, 16.2%	n=0, 0%
Learning disabilities	n=10, 9.5%	n=55, 52.4%	n=38, 36.2%	n=2, 1.9%
Medical, obstetric complications	n=19, 18.1%	n=55, 52.4%	n=30, 28.6%	n=1, 1%
How confident are you in managing the following conditions				
Stress, anxiety and depression	n=4, 3.8%	n=49, 46.7%	n=49, 46.7%	n=3, 2.9%
Learning disabilities	n=2, 1.9%	n=32, 30.5%	n=63, 60%	n=8, 7.6%
Medical, obstetric complications	n=7, 6.7%	n=54, 51.4%	n=42, 40%	n=2, 1.9%

Table 3: Professional Issues in Maternal Mental Health Scale (PIMMHS)

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
I know exactly who to contact if a woman is experiencing mental health problems	22 (21.2%)	64 (61.5%)	9 (8.7%)	8 (7.7%)	1 (1%)
Sometimes I feel reluctant to discuss emotional problems that a woman might be having as I feel uncomfortable discussing these with her	0 (0.0%)	5 (4.8%)	4 (3.8%)	76 (73.1%)	19 (18.3%)
Training pays sufficient attention to the culture dimensions of pregnancy, birth and postnatal care	4 (3.8%)	16 (15.4%)	19 (18.3%)	52 (50%)	13 (12.5%)
It is easy for me to obtain help for women with mental health problems	5 (4.8%)	29 (27.9%)	16 (15.4%)	38 (36.5%)	16 (15.4%)
Sometimes I feel reluctant to discuss emotional problems that a woman might be having as I know I am not going to have enough time to deal with them	1 (1%)	16 (15.4%)	10 (9.6%)	60 (57.7%)	17 (16.3%)
Sometimes I feel reluctant to discuss emotional problems that a woman might be having because I would not know what to do or who to ask for advice	1 (1%)	8 (7.7%)	8 (7.7%)	68 (65.4%)	19 (18.3%)
PHNs are equipped through training to manage the mental health needs of a woman who has different cultural needs	1 (1%)	10 (9.6%)	14 (13.5%)	47 (45.2%)	32 (30.8%)

Table 4. MICA-4 (St A = strongly agree, A = agree, So A = somewhat agree, So D = somewhat disagree, D = disagree, St D = strongly disagree)

	St A	A	So, A	So, D	D	St D
I just learn about mental health when I have to, and would not bother reading additional material on it	0 (0.0%)	11 (10.5%)	27 (25.7%)	17 (16.2%)	36 (34.3%)	14 (13.3%)
People with severe mental illness can never recover enough to have a good quality of life	1 (1%)	4 (3.8%)	7 (6.7%)	12 (11.4%)	62 (59%)	19 (18.1%)
Working in the mental health field is just as respectable as other fields of health and social care	50 (47.6%)	50 (47.6%)	2 (1.9%)	2 (1.9%)	1 (1%)	0 (0.0%)
If I had a mental illness, I would never admit this to my friends because I would fear being treated differently	1 (1%)	10 (9.5%)	25 (23.8%)	19 (18.1%)	40 (38.1%)	10 (9.5%)
People with severe mental illness are dangerous more often than not	0 (0.0%)	1 (1%)	8 (7.6%)	20 (19%)	46 (43.8%)	30 (28.6%)
Health/social care staff know more about the lives of people treated for a mental illness than do family members or friends.	4 (3.8%)	10 (9.5%)	16 (15.2%)	34 (32.4%)	34 (32.4%)	7 (6.7%)
If I had a mental illness, I would never admit this to my colleagues for fear of being treated differently	10 (9.5%)	15 (14.3%)	27 (25.7%)	16 (15.2%)	29 (27.6%)	8 (7.6%)
Being a health/social care professional in the area of mental health is not like	5 (4.8%)	2 (1.9%)	3 (2.9%)	7 (6.7%)	45 (42.9%)	43 (41%)

being a real health/social care professional						
If a senior colleague instructed me to treat people with a mental illness in a disrespectful manner, I would not follow their instructions	84 (80%)	14 (13.3%)	1 (1%)	2 (1.9%)	2 (1.9%)	2 (1.9%)
I feel as comfortable talking to a person with a mental illness as I do talking to a person with a physical illness	29 (27.6%)	33 (31.4%)	25 (23.8%)	10 (9.5%)	8 (7.6%)	0 (0.0%)
It is important that any health/social care professional supporting a person with a mental illness also ensures that their physical health is assessed	53 (50.5%)	45 (42.9%)	5 (4.8%)	1 (1%)	0 (0.0%)	1 (1%)
The public does not need to be protected from people with a severe mental illness	6 (5.7%)	26 (24.8%)	27 (25.7%)	25 (23.8%)	18 (17.1%)	3 (2.9%)
If a person with a mental illness complained of physical symptoms (such as chest pain) I would attribute it to their mental illness	3 (2.9%)	0 (0.0%)	3 (2.9%)	10 (9.5%)	38 (36.2%)	51 (48.6%)
General practitioners should not be expected to complete a thorough assessment for people with psychiatric symptoms because they can be referred to a psychiatrist	2 (1.9%)	7 (6.7%)	12 (11.4%)	11 (10.5%)	47 (44.8%)	26 (24.8%)
I would use the terms 'crazy', 'nutter', 'mad' etc. to describe to colleagues, people with a mental illness who I have seen in my work	3 (2.9%)	0 (0.0%)	1 (1%)	6 (5.7%)	29 (27.6%)	66 (62.9%)
If a colleague told me they had a mental illness, I would still want to work with them	55 (52.4%)	46 (43.8%)	4 (3.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

Table 5: Respondents perinatal mental health learning needs

Variable	Variable
Feels well equipped to support women with perinatal mental health disorders (n=105)	Has sufficient access to information on pregnancy and perinatal mental health disorders (n=105)
Yes n=26, 26.5%	Yes n=29, 29.6%
No n=72, 73.5%	No n=69, 70.4%
Topics additional education desired (n=105)	Mental health disorders – additional education desired (n=105)
Understanding service options n=62, 59.0%	Anxiety disorder n=73, 69.5%
Impact of childbearing on mental illness n=59, 56.2%	Depression n=69, 65.7%
Signs and symptoms n=57, 54.3%	Personality disorder n=55, 52.4%
Roles of other healthcare professionals n=49, 46.7%	Bipolar disorder n= 53, 50.5%
Child safety n=35, 33.3%	Schizophrenia n= 52, 49.5%
Other n=0, 0.0%	Substance related disorder n=48, 45.7%
No additional knowledge required n=0, 0.0%	Tocophobia n=37, 35.2%
	Other n=0, 0.0%
	No further training required n=0, 0.0%
Skills – additional education required (n=105)	Preferred educational format (1st choice) (105)
Assessment of mental health n= 67, 63.8%	Study days n=48, 45.7%
Assessment of risk of mental illness n= 58, 55.2%	Mandatory in-service education programme n=25, 23.8%
Clinical management n= 50, 47.6%	Postgraduate module n=12, 11.4%
Handling stress and aggression n= 49, 46.7%	Seminars n=11, 10.5%
Working with families and carers n=42, 40.0%	Skills workshop n=7, 6.7%
Communication skills n= 37, 35.2%	Online n=2, 1.9%
Support with breastfeeding n= 35, 33.3%	Other n=1, 1.0%
Discharge planning n=26, 24.8%	
Other n=1, 1.0%	
No additional skills required n=2, 1.9%	

Table 6: Thematic analysis of open question: “Is there anything you would like to add?” (n=30)

Continuous Professional Development	R3: I would welcome some further training into all aspects of mental health; R37: As a PHN I don't feel confident dealing with clients with mental health issues; R56: I think most professionals need more up to date education on mental health issues to support clients; R75: Limited training in screening for PND otherwise it is self- directed learning. Mental health issues and maternal paternal capacity is a challenging area that needs in-depth understanding from a healthcare professional perspective.
Engagement in Perinatal Mental Health conversations	R57: Maternal mental health can be glossed over at child developmental clinics. It's a point of contact even to observe presentation. I have noted mother's own appearance go downhill and when I ask they will tell you about their problems. It's a great opportunity to guide them and follow up how did they engage or call them to review again. Focus is often too much on the child only for clinics; R100: As professionals to be mindful not to make assumptions, make judgements too quickly; R104: We talk to them about their mental health but they still ask do other people feel like this? Seems to be taboo almost with so many mental health issues!.
Referral	R29: There should be a community postnatal mental health nurse in every community area; R67: I suppose we feel ill-equipped at times when dealing with mental health problems as we feel we are not the “experts” in that field and more use should be made of the “community mental health services” and have a member of that team that we could liaise with directly and get advice and someone that we could directly refer women/mothers to without having to go through GP service; R84: I feel there needs to be a clear pathway when and where to refer to. When the community psychiatric nurse (CPN) is involved I feel less worried about the mother; R23: PHNs cannot refer to psychiatric services locally as they will not accept referrals; R75: Difficulty can arise if a client does not want to give their consent for you to discuss their mental health difficulties with another professional.
Personal experience	R44: I have experienced anxiety and PND and feel that I can relate to women suffering in the same way because of this i.e. I have insight which can be beneficial in my practice; R39: Having suffered with PND after my first child, I feel this is paramount to educate staff and mothers, to eliminate stigma and feelings of worthlessness and to promote bonding and fulfilment in mothers.
R= respondent; PHN= Public Health Nurse; GP= General Practitioner; PND= Postnatal depression	